

REMARKS/ARGUMENTS

Claims 15, 17, 19, 20, 22-25, 27 and 29-33 have been resubmitted. Claims 15, 20, 25 and 30 have been amended. No claims have been canceled. No new claims have been added. No new matter has been added.

Support for the amendments to claims 15 and 25 can at least be found at page 5, paragraph [0023], pages 7 through 8, paragraph [0033], page 8, paragraph [0034], and the figures and claims as originally filed.

Support for the amendments to claims 20 and 30 can at least be found at page 5, paragraph [0023] and the figures and claims as originally filed.

The Examiner has objected to the drawings under 37 C.F.R. § 1.83(a). The Examiner has objected to the specification as failing to provide proper antecedent basis for the claimed subject matter. See 37 C.F.R. § 1.75(d)(1). The Examiner has rejected Claims 15, 17, 19, 20, 22 to 25, 27 and 29 to 33 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Examiner has rejected Claims 15, 17, 19, 20, 23, 24, 25, 27, 29, 30, 32 and 33 under 35 U.S.C. § 102(e) as being anticipated by Pritchard et al. The Examiner has rejected Claims 22 and 31 under 35 U.S.C. § 103(a) as being unpatentable over Pritchard et al. in view of Sjunnesson et al.

Objections to the Drawings

The Examiner has objected to the drawings under 37 C.F.R. § 1.83(a). The Examiner stated the drawings must show every feature of the invention specified in the claims. Therefore, the structure of claims 15 and 25 (a radial air flow swirler mounted to an internal surface of the annular dome) must be shown or the feature(s) cancelled from the claim(s). No new matter should be entered. It can be seen in figure 1 that the radial flow air swirler is mounted to the heat shield 17, not to annular dome 16.

Applicant has amended claims 15 and 25. The specification provides proper antecedent basis for the claimed subject matter of both amended claims 15 and 25. Support for the amendments to claims 15 and 25 can at least be found at page 7, paragraph [0032] and the figures and claims as originally filed. No new matter has been added as a result of these amendments.

Applicant's amended claims 15 and 25 now both recite "a radial flow air swirler mounted to a radial flow air swirler housing," and "said radial flow air swirler housing connected to said annular dome."

Applicant respectfully requests that the Examiner reconsider the objection in light of the amendments made by Applicant and withdraw his objection to the drawings.

Objections to the Specification

The Examiner has objected to the specification as failing to provide proper antecedent basis for the claimed subject matter. See 37 C.F.R. § 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: there is no antecedent basis in the specification for the language of claims 15 and 25

which state that "a radial flow air swirler mounted to an internal surface of the annular dome", and claims 20 and 30 which states "said main circuit fuel nozzles each discharge fuel at an angle with respect to a radially extending axial axis of each nozzle."

Applicant has amended claims 15 and 25. The specification provides proper antecedent basis for the claimed subject matter of both amended claims 15 and 25. Support for the amendments to claims 15 and 25 can at least be found at page 5, paragraph [0023], pages 7 through 8, paragraph [0033], page 8, paragraph [0034], and the figures and claims as originally filed. No new matter has been added as a result of these amendments.

Applicant has also amended claims 20 and 30. The specification provides proper antecedent basis for the claimed subject matter of both amended claims 20 and 30. Support for the amendments to claims 20 and 30 can at least be found at page 5, paragraph [0023] and the figures and claims as originally filed. No new matter has been added as a result of these amendments.

Applicant respectfully requests that the Examiner reconsider the objection in light of the amendments made by Applicant and withdraw his objection to the specification.

35 U.S.C. § 112, second paragraph

The Examiner has rejected Claims 15, 17, 19, 20, 22 to 25, 27 and 29 to 33 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Applicant has amended claims 15 and 25, and the terms "internal" and "external" have been deleted. Support for the amendments to claims 15 and 25 can at least be found at page 5, paragraph [0023], pages 7 through 8, paragraph [0033], page 8, paragraph [0034], and the figures and claims as originally filed. No new matter has been added.

Applicant has amended claims 20 and 30, and the expression "radially extending axial axis" has been deleted. Support for the amendments to claims 20 and 30 can at least be found at page 5, paragraph [0023] and the figures and claims as originally filed. No new matter has been added as a result of these amendments.

Applicant respectfully requests that the Examiner reconsider the rejection in light of the amendments made by Applicant and withdraw his rejection of claims 15, 17, 19, 20, 22 to 25, 27 and 29 to 33 under 35 U.S.C. § 112, second paragraph.

Pritchard et al.

Pritchard et al. discloses a multiple annular combustion chamber swirler including a pilot mixer including a pilot fuel nozzle mounted in a pilot housing and a main mixer including fuel injection ports formed in a fuel manifold (See col. 2, ll. 53-64; col. 3, ll. 33-56). During starting and low power conditions, only the pilot mixer is fueled, and the main mixer is fueled under high power conditions (See col. 4, ll.54-58).

The Examiner has rejected Claims 15, 17, 19, 20, 23, 24, 25, 27, 29, 30, 32 and 33 under 35 U.S.C. § 102(e) as being anticipated by Pritchard et al. To anticipate a claim under 35 U.S.C. § 102, a single source must contain all of the elements of the claim. *Lewmar Marine Inc. v. Barient, Inc.*, 827 F.2d 744, 747,

3 U.S.P.Q.2d 1766, 1768 (Fed. Cir. 1987), *cert. denied*, 484 U.S. 1007 (1988). Moreover, the single source must disclose all of the claimed elements "arranged as in the claim." *Structural Rubber Prods. Co. v. Park Rubber Co.*, 749 F.2d 707, 716, 223 U.S.P.Q. 1264, 1271 (Fed. Cir. 1984).

In framing this objection, the Examiner stated the following:

Pritchard et al. disclose a gas turbine engine combustor and fuel injector having an annular dome 38, a radial flow air swirler 102 mounted to dome 38 and to an external surface of fuel injector body 96, a plurality of axial air swirlers 74, 76, a pilot nozzle 68, radial main nozzles 98, and wherein the dome includes a plurality of circumferentially disposed dome cooling nozzles. The fuel injector body 96 "incorporates" both the pilot circuit and the main circuit nozzles. Applicant argues that Pritchard does not disclose a single fuel injector body as in the present invention, and instead teaches the use of separate housing structures 60 and 94 for the pilot fuel nozzle 64 and the main fuel nozzles 98, respectively. It is noted, however, that applicant is not claiming a single fuel injector body. It can furthermore be seen in figure 1 that the pilot circuit fuel nozzle 21 is not part of the fuel injector body 15, but is separated therefrom by the swirlers 22.

Unlike Applicants' amended claims 15 and 25, Pritchard et al. does not disclose all of the claimed elements of Applicants' amended claims 15 and 25 as arranged in Applicants' amended claims. Pritchard et al. does not disclose a fuel injector body comprising all of the elements arranged in the order claimed in Applicants' amended claims 15 and 25. In Applicants' amended claims 15 and 25, the main circuit fuel nozzle is "*disposed about an outer periphery of said fuel injector body*", and is "*in fluid communication with a main circuit burner fuel through a passageway formed within said fuel injector body*". The axially

oriented air swirlers are *“located within said fuel injector body and concentrically disposed about a pilot circuit fuel nozzle and between said main circuit fuel nozzle and said pilot circuit fuel nozzle”*. And, the pilot circuit fuel nozzle *“is in fluid communication with a pilot circuit burner fuel through said combustion centerline”*.

In contrast, Pritchard et al. discloses a fuel manifold having an annular housing mounted between the pilot housing and the main housing (See col. 3, ll. 35-39). The manifold has a plurality of fuel injection ports on its exterior surface for introducing fuel into the cavity of the main mixer (Id.). The fuel manifold of Pritchard et al. delivers fuel to the fuel injection ports, however; the fuel manifold is not part of the pilot mixer structure as shown in Figure 4 of Pritchard et al. Unlike Pritchard et al., Applicants' amended claims 15 and 25 disclose a fuel injector body that incorporates both the main circuit fuel nozzle and the pilot circuit fuel nozzle, and their respective elements, within the same structure. As a result, Pritchard et al. does not contain and fails to disclose all the claimed elements of Applicants' amended claims 15 and 25.

Therefore, Applicants' amended Claims 15 and 25, and Claims 17, 19, 20, 23, 24, 27, 29, 30, 32 and 33 by virtue of their dependency upon said amended independent claims, are not anticipated by Pritchard et al. under 35 U.S.C. Section 102(b).

Applicant respectfully requests that the Examiner reconsider the rejection in light of the amendments made by Applicant and withdraw his rejection of claims 15, 17, 19, 20, 23, 24, 25, 27, 29, 30, 32 and 33 under 35 U.S.C. § 102(b).

Pritchard et al. in view of Sjunnesson et al.

Sjunnesson et al. discloses a low-emission combustion chamber for gas turbine engines in which a still further improved combustion process can be obtained thereby providing for still more reduced emissions, particularly of undesirable nitrogen oxides (See Col. 1, ll. 43-49).

The Examiner has rejected Claims 22 and 31 under 35 U.S.C. § 103(a) as being unpatentable over Pritchard et al. in view of Sjunnesson et al. For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a prima facie case of obviousness. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). Establishing a prima facie case of obviousness requires that all elements of the invention be disclosed in the prior art. *In Re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970).

In framing this objection, the Examiner stated the following:

Sjunnesson et al. disclose that gas turbine combustor can be either of the "can" type or "annular" type (see col. 2, l. 28). In view of Sjunnesson et al. recognizing the art equivalency of "can" type or "annular" type combustors, it would have been obvious to substitute a "can" type combustor for the "annular" type combustor of Pritchard et al.

In view of the above-mentioned discussion of Pritchard et al., Pritchard et al. does not contain all of the claimed elements of Applicants' amended independent claims 15 and 25. In light of their dependency upon said amended independent claims, Pritchard et al. does not contain all of the claimed elements of Applicants' claims 22 and 31. Moreover, the combination of Pritchard et al. in view of Sjunnesson et al. does not contain all of the claimed elements of Applicants' amended claims 15 and 25 and, by virtue of their dependency, Applicants' claims 22 and 31.

Therefore, Applicants' claims 22 and 31, by virtue of their dependence upon Applicants' amended claims 15 and 25, are patentable over Pritchard et al. in view of Sjunnesson et al. under 35 U.S.C. Section 103(a).

Applicant respectfully requests that the Examiner reconsider the rejection in light of the amendments made by Applicant and withdraw his rejection of claims 22 and 31 under 35 U.S.C. § 103(a).

CONCLUSION

Reconsideration and withdrawal of the Office Action with respect to Claims 15, 17, 19, 20, 22-25, 27 and 29-33 is requested.

In the event the examiner wishes to discuss any aspect of this response, please contact the attorney at the telephone number identified below.

Respectfully submitted,

By:



Michael A. Shimokaji
Attorney Registration No. 32, 303

Honeywell International Inc.
Law Dept. AB2
P.O. Box 2245
Morristown, NJ 07962-9806
(602) 365-2588
Attn: Robert Desmond

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Michael A. Shimokaji, Reg. No. 32,303